Appendix: Measuring Diet Quality: The Healthy Eating Index

The HEI measures overall diet quality by evaluating an individual's diet against 10 dietary components reflecting recommendations in the *Dietary Guidelines for Americans* (U.S. Dept. of Agr., U.S. Dept. of Health and Human Services, 1995) and the *Food Guide Pyramid* (U.S. Dept. of Agr., 1992):

- Components 1-5 measure the extent to which a person's diet conforms to the *Food Guide Pyramid* serving recommendations for the grains, vegetables, fruits, milk, and meat groups.

- Components 6-10 measure the extent to which a person's diet conforms to the *Dietary Guidelines* recommendations for total fat, saturated fat, cholesterol, sodium, and variety.

An individual's diet was assigned a score of 0-10 for each of these 10 components in the following manner: For each of the five food group components of the HEI, individuals who consumed the recommended number of servings received a maximum score of 10. A score of zero was assigned for any food group where no items from that food group were eaten. Scores between zero and 10 were calculated proportionate to the number of servings consumed. For example, if the recommended number of servings was 8 and an individual consumed 4 servings, the component score for the individual is 5 points (one-half of 10).

The scores for fat and saturated fat were related to their consumption in proportion to total food energy. Fat intakes contributing to less than or equal to 30 percent of the total calories were given a score of 10. The score declined to zero when the proportion of total calories from fat was 45 percent or more. Linear interpolation was applied to fat intakes that contribute between 30 and 45 percent of total calories. Intakes of saturated fat were similarly scored with a score of 10 given to less than 10 percent of total calories from saturated fat and a score of zero for intakes that contribute to 15 percent or more of total calories.

Scores for both cholesterol and sodium were based on milligrams consumed in the diet. A score of 10 was given for cholesterol intakes less than or equal to 300 milligrams per day. Zero points were given for intakes at or over 450 milligrams. Intermediate scores were given for intakes between the two limits. For sodium, a maximum score was obtained for intakes less than or equal to 2,400 milligrams per day. A zero score was given for sodium intakes at 4,800 milligrams or higher. Again, intermediate scores for intakes between the two cutoff points were given proportionately.

Dietary variety was assessed by totaling the number of "different" foods eaten by an individual in amounts sufficient to contribute at least one-half of a serving in a particular food group. Food mixtures were broken into their component ingredients and assigned to relevant food groups. Similar types of foods were grouped together and counted only once in measuring the score for variety. A maximum score of 10 was awarded if 16 or more different food items were consumed over a 3-day period. A score of zero was given if 6 or fewer food items were consumed. Intermediate scores were awarded proportionate to consumption between the cutoffs.

An individual's HEI is the sum of these 10 component scores. Therefore, the range of HEI is 0-100. The mean HEI for our samples of preschoolers and school-age children was 65.4 and 62.6, respectively (table 1). For complete details on the construction of HEI, see U.S. Department of Agriculture (1995) or Kennedy and others (1995).